

# CEOS Update

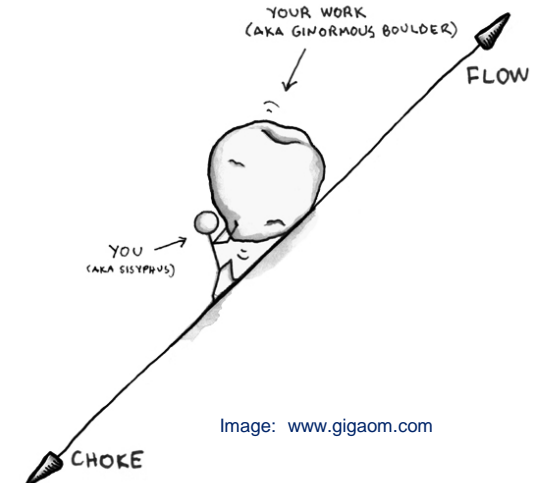
Kerry Ann Sawyer  
CEOS Executive Officer  
CEOS WGCV-38

30<sup>th</sup> September to 3<sup>rd</sup> October 2014





- **CEOS 2014 Priorities and Achievements**
  - **CEOS 2014-2016 Work Plan Status Update and Relevant WGCV Objectives/Deliverables**
- **Timeline for Annual Update to the Three-Year Work Plan**
- **Outcomes of SIT Technical Workshop**
- **Preparation for 28<sup>th</sup> CEOS Plenary**
- **Preparation for GEO-XI Plenary**





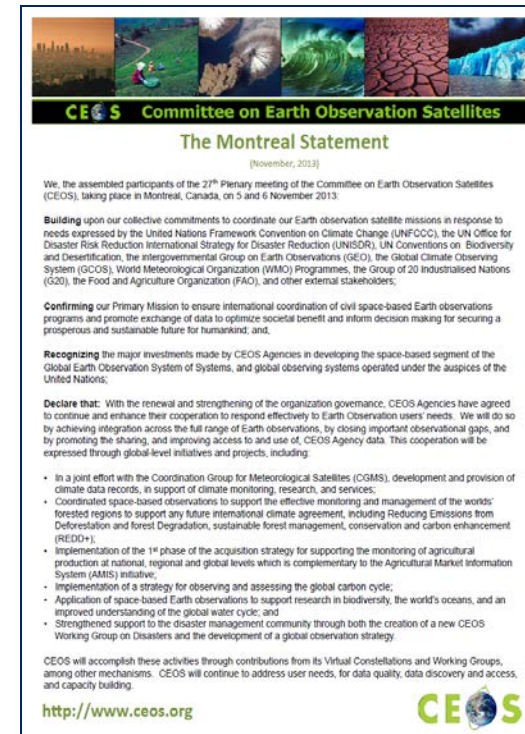
# **CEOS 2014 Priorities and Achievements**

**CEOS 2014-2016 Work Plan Status Update and Relevant WGISS Objectives/Deliverables**



## CEOS Agencies will continue and enhance their cooperation to respond effectively to Earth observation users needs in the areas of climate monitoring and research, carbon observations, food security, disaster risk management, capacity building, and data availability and access.

- In a joint effort with the Coordination Group for Meteorological Satellites (CGMS), development and provision of climate data records, in support of climate monitoring, research, and services;
- Coordinated space-based observations to support the effective monitoring and management of the worlds' forested regions to support any future international climate agreement, including Reducing Emissions from Deforestation and forest Degradation, sustainable forest management, conservation and carbon enhancement (REDD+);
- Implementation of the 1<sup>st</sup> phase of the acquisition strategy for supporting the monitoring of agricultural production at national, regional and global levels which is complementary to the Agricultural Market Information System (AMIS) initiative;
- Implementation of a strategy for observing and assessing the global carbon cycle;
- Application of space-based Earth observations to support research in biodiversity, the world's oceans, and an improved understanding of the global water cycle; and
- Strengthened support to the disaster management community through both the creation of a new CEOS Working Group on Disasters and the development of a global observation strategy.



**CEOS Committee on Earth Observation Satellites**  
November, 2013

**The Montreal Statement**

We, the assembled participants of the 27<sup>th</sup> Primary meeting of the Committee on Earth Observation Satellites (CEOS), taking place in Montreal, Canada, on 5 and 6 November 2013:

**Building** upon our collective commitments to coordinate our Earth observation satellite missions in response to needs expressed by the United Nations Frameworks Convention on Climate Change (UNFCCC), the UN Office for Disaster Risk Reduction International Strategy for Disaster Reduction (UNISDR), UN Conventions on Biodiversity and Desertification, the intergovernmental Group on Earth Observations (GEO), the Global Climate Observing System (GCOS), World Meteorological Organization (WMO) Programmes, the Group of 20 Industrialised Nations (G20), the Food and Agriculture Organization (FAO), and other external stakeholders;


**Confirming** our Primary Mission to ensure international coordination of civil space-based Earth observations programs and promote exchange of data to optimize societal benefit and inform decision making for securing a prosperous and sustainable future for humankind; and

**Recognizing** the major investments made by CEOS Agencies in developing the space-based segment of the Global Earth Observation System of Systems, and global observing systems operated under the auspices of the United Nations;

**Declare that:** With the renewal and strengthening of the organization governance, CEOS Agencies have agreed to continue and enhance their cooperation to respond effectively to Earth observation users' needs. We will do so by achieving integration across the full range of Earth observations, by closing important observational gaps, and by promoting the sharing, and improving access to and use of, CEOS Agency data. This cooperation will be expressed through global-level initiatives and projects, including:

- In a joint effort with the Coordination Group for Meteorological Satellites (CGMS), development and provision of climate data records, in support of climate monitoring, research, and services;
- Coordinated space-based observations to support the effective monitoring and management of the worlds' forested regions to support any future international climate agreement, including Reducing Emissions from Deforestation and forest Degradation, sustainable forest management, conservation and carbon enhancement (REDD+);
- Implementation of the 1<sup>st</sup> phase of the acquisition strategy for supporting the monitoring of agricultural production at national, regional and global levels which is complementary to the Agricultural Market Information System (AMIS) initiative;
- Implementation of a strategy for observing and assessing the global carbon cycle;
- Application of space-based Earth observations to support research in biodiversity, the world's oceans, and an improved understanding of the global water cycle; and
- Strengthened support to the disaster management community through both the creation of a new CEOS Working Group on Disasters and the development of a global observation strategy.

CEOS will accomplish these activities through contributions from its Virtual Constellations and Working Groups, among other mechanisms. CEOS will continue to address user needs, for data quality, data discovery and access, and capacity building.

<http://www.ceos.org> 

**Expressions of Cooperation...**



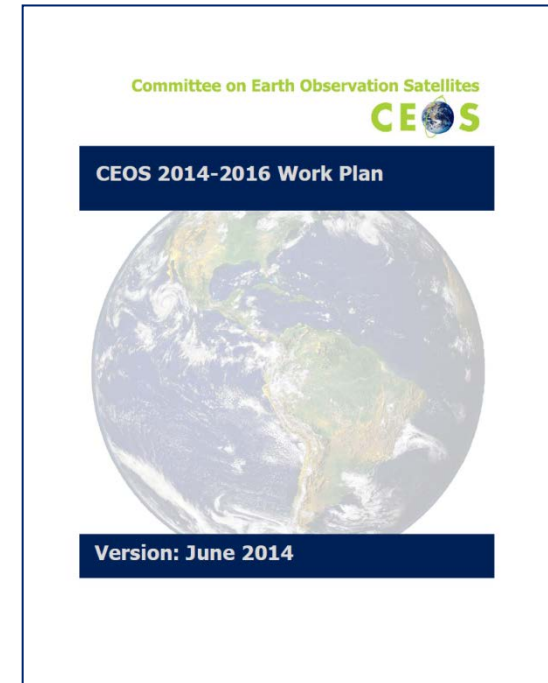
...translated into **EXPECTED OUTCOMES** that are the backbone of the **CEOS 2014-2016 Work Plan**.

The expected outcomes for 2014-2016 reflect the ongoing and emerging priorities of CEOS, as characterized by its internal decision making and external commitments. They are intended to focus on improved Earth observation (EO) systems coordination and enhanced data access for key global programs and initiatives.

- The main outcomes are described for the following **nine thematic areas** for the period 2014-2016:
  - Climate Monitoring, Research, and Services
  - Carbon Observations, Including Forested Regions
  - Observations for Agriculture
  - Observations for Disasters
  - Capacity Building, Data Access, Availability and Quality
  - Advancement of the CEOS Virtual Constellations
  - Support to Other Key Stakeholder Initiatives
  - Outreach to Key Stakeholders
  - Organizational Issues



- ***Support design/production/release of first CEOS Three-Year Work Plan***
  - Focus on objectives and deliverables associated with timescales and assigned responsibilities
  - Provide sound and shared basis for measuring our progress in a multiannual perspective
  - Will be updated annually by the CEO under the guidance of the CEOS Chair, and in consultation with the CEOS Strategic Implementation Team Chair, CEOS Secretariat, CEOS Working Groups, Virtual Constellations, *Ad Hoc* Teams, the CEOS membership at large, and CEOS's external stakeholders
  - Shall be consistent with and mutually supporting of other CEOS guiding documents



Just three months ago



2014-2016 CEOS Work Plan released on 5 June 2014

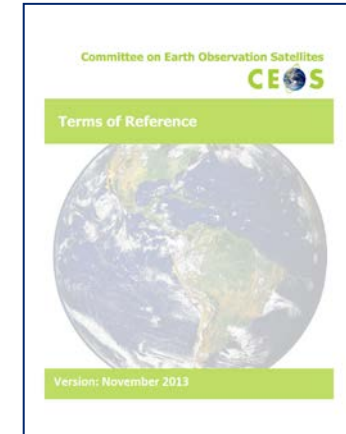
Eighty (80) Objectives/Deliverables for 2014-2016





## *Governance: implementation of agreed post-CEOS Self-Study (CSS)*

- Final output of the CSS is a set of strategic documents that will guide CEOS in the Future
  - CEOS Terms of Reference (ToR)
  - CEOS Strategic Guidance (SG) (~10-year)
  - CEOS Governance and Process (GP) (~5-year)
  - Element ToRs for CEOS Chair, SEC, SIT Chair, CEO, SEO
- *Oversee adherence to agreed criteria for reviewing activities*
  - Alignment with CEOS strategic goals
  - Benefit to internal and/or external stakeholders
  - Feasibility and Affordability



**Make sure that these criteria are systematically applied when deciding on new proposed activities**



## There are 36 Objectives/Deliverables projected to be completed:

- Four (4) Climate Monitoring, Research, and Services (CMRS-X)
- Four (4) Carbon Observations, Including Forested Regions (CARB-X)
- One (1) Observations for Agriculture (AGRI-X)
- Five (5) Observations for Disasters (DIS-X)
- Six (6) Capacity Building, Data Access, Availability and Quality (DATA-X, **CV-X**)
- Four (4) Advancement of the CEOS Virtual Constellations (VC-X)
- Two (2) Support to Other Key Stakeholder Initiatives (BON-X, POL-X)
- Five (5) Outreach to Key Stakeholders (OUT-X)
- Five (5) Organizational Issues (ORG-X)

8 Objectives/Deliverables are already CLOSED leaving 28  
"objectables" to confirm CEOS achievement of 2014  
Priorities





**WGCV has three sections in the Capacity Building, Data Access, Availability and Quality Thematic Area with identified outcomes and objectives/deliverables for 2014 and 2015-2016**

- 1. Coordinate the development of suitable methodologies for the on-ground characterization of satellite-based EO sensors, the calibration of EO missions, and the validation of satellite-based Level 1 and Level 2 products.**
- 2. Continue the cooperation with other CEOS elements in supporting the generation of well-calibrated and validated data records.**
- 3. Continue cooperation with GEO, Global Space-based Inter-calibration System (GSICS), and WMO and ground-based networks in the provision of high quality EO data products.**



<b>Capacity Building, Data Access, Availability and Quality Objectives/Deliverables: 2014-2016</b>			
<b>Objective/Deliverable</b>	<b>Projected Completion Date</b>	<b>Background Information</b>	<b>Responsible CEOS Entity</b>
CV-5: GSICS cooperation	Q4 2014 to Q4 2016	Cooperation with GSICS in specific domains of sensor calibration, especially sensor inter-calibration. This work includes the analysis of opportunities for cooperation with GSICS, including identification of concrete topical fields. Based on that internal analysis a cooperative arrangement with GSICS shall be implemented. This arrangement will be communicated to the CEOS Plenary for approval, and will be described in the WGCV Work Plan.	WGCV
CV-8: Sea Surface Temperature (SST) & Land Surface Temperature (LST) Comparison Campaign Plan	Q2 2014	Set up a multi-agency comparison project to ensure international consistency in post-launch Cal/Val of satellite-derived Earth surface temperatures for climate data records. This effort includes (a) implementation of a laboratory campaign for radiometers and black bodies, and (b) initiation of ocean-based SST and land-based LST comparison campaigns, both supported by a White Paper which includes the plan for the project and costing.	WGCV with support from SST-VC



## Capacity Building, Data Access, Availability and Quality Objectives/Deliverables: 2014-2016

Objective/Deliverable	Projected Completion Date	Background Information	Responsible CEOS Entity
CV-9: Radiometric Calibration Network (RADCALNET)	Q1 2014 to Q4 2016	Establish an automated network via a multi-agency project, including coordination infrastructure, and land-based test-sites for post-launch traceable calibration of sensor radiometric gain, initially for <50 m resolution sensors.	WGCV
CV-10: Potential and fitness checks for TanDEM-X DEM products	Q4 2014 to Q4 2016	The proof of the TanDEM-X DEM products is essential for many applications within CEOS and includes (a) an analysis of intermediate TanDEM-X products with respect to accuracy, completeness, and quality for CEOS test sites in Europe, demonstrating its potential in the United Kingdom (UK) for the improvement of very high resolution landslip mapping; (b) a follow-up study for final TanDEM-X DEM products over nine globally spread CEOS test sites and test areas over the UK; and (c) a "Fitness for Purpose" of TanDEM-X products assessment for geo-radiometric correction of high resolution optical imagery (Sentinel-2) and of SAR data from Sentinel-1.	WGCV



## 3.5 WGISS and WGCV – DATA-1, DATA-2, CV-5, CV-8, CV-9, CV-10

**\*No WGCapD 2014 Deliverables**

Code	Objective/Deliverable	Completion		Background Information	Responsible CEOS Entity	External Stakeholder Reference	OPEN/ CLOSED	2013 CEOS Action Con't	Status Report
		Year	Qtr						
DATA-1	CEOS OpenSearch Best Practices Guideline Document	2014	Q4	This document will serve as a guideline that shows a common set of rules to help CEOS Agencies implement an OpenSearch service aligning with CEOS best practices, with the goal of achieving better interoperability among CEOS Agencies. Also, this document will be of benefit to those using CEOS portals or any client developer who is interested in CEOS satellite data and wants to make use of the satellite data catalogs in their application.	WGISS				The CEOS OpenSearch Team is developing the CEOS OpenSearch Best Practices Guideline Document. This document will also include CWIC OpenSearch Best Practices information.
DATA-2	Full representation of CEOS Agency datasets in the IDN and accessible via CWIC/OpenSearch	2014	Q4	As the IDN contains OpenSearch endpoints for data access and is also the link with GCI, it is essential that all CEOS Agencies keep information on the data up-to-date in the IDN. This effort will facilitate timely access to products developed by the Virtual Constellations (e.g., Group for High Resolution Sea Surface Temperature [GHRST]).	WGISS with support from VCs				The IDN is periodically sending the list of metadata entries for CEOS agency to review. They are including information from the link-checking tool if there are URLs that need to be corrected. The IDN also developed a CEOS IDN Best Practices for Data Discovery guide. In addition, WGISS is promoting IDN outreach at CEOS meetings to encourage agencies to add and update their dataset information.
CV-5	GSICS cooperation	2014 - 2016	Q4	Cooperation with GSICS in specific domains of sensor calibration, especially sensor inter-calibration. This work includes the analysis of opportunities for cooperation with GSICS, including identification of concrete topical fields. Based on that internal analysis a cooperative arrangement with GSICS shall be implemented. This arrangement will be communicated to the CEOS Plenary for approval, and will be described in the WGCV Work Plan.	WGCV				
CV-8	Sea Surface Temperature (SST) & Land Surface Temperature (LST) Comparison Campaign Plan	2014	Q2	Set up a multi-agency comparison project to ensure international consistency in post-launch Cal/Val of satellite-derived Earth surface temperatures for climate data records. This effort includes (a) implementation of a laboratory campaign for radiometers and black bodies, and (b) initiation of ocean-based SST and land-based LST comparison campaigns, both supported by a White Paper which includes the plan for the project and costing.	WGCV with support from SST VC	IN-02-C1		IN-02-C1_5	
CV-9	Radiometric Calibration Network (RADCALNET)	2014-2016	Q1, Q4	Establish an automated network via a multi-agency project, including coordination infrastructure, and land-based test-sites for post-launch traceable calibration of sensor radiometric gain, initially for <50 m resolution sensors.	WGCV				
CV-10	Potential and fitness checks for TanDEM-X DEM products	2014 - 2016	Q4	The proof of the TanDEM-X DEM products is essential for many applications within CEOS and includes (a) an analysis of intermediate TanDEM-X products with respect to accuracy, completeness, and quality for CEOS test sites in Europe, demonstrating its potential in the United Kingdom (UK) for the improvement of very high resolution landslip mapping; (b) a follow-up study for final TanDEM-X DEM products over nine globally spread CEOS test sites and test areas over the UK; and (c) a "Fitness for Purpose" of TanDEM-X products assessment for geo-radiometric correction of high resolution optical imagery (Sentinel-2) and of SAR data from Sentinel-1.	WGCV				

Need to now populate new columns - **ACTION to WGCV:**

- External Stakeholder Reference
- OPEN/CLOSED
- 2013 CEOS Action Continued
- Status Report (to include planned milestones and deliverables)

*In lieu of online Actions Tracker – going “back to basics”*



# **Timeline for Annual Update to the Three-Year Work Plan CEOS 2015-2017 Work Plan**



1. **Mid-November:** begin gathering inputs from WG Chairs, VC Co-Leads, and *Ad hoc* Team leads to update and identify key objectives and activities for 2015, 2016-2017 with all external stakeholders. Also participate in the GEO-XI Plenary meeting where the CEO will capture GEO's priorities for the coming three years.
2. **Early December:** CEOS-GEO Coordination meeting will occur where we will discuss both CEOS and GEO priorities and identify synergies where CEOS can support GEO.
3. **Early January:** after the Coordination meeting, prepare a draft Work Plan to reflect inputs from CEOS entities and outcomes from the November GEO Plenary and the December CEOS-GEO Coordination Meeting.
4. **Mid-January:** share the draft Work Plan with the Working Groups, VCs, and *Ad hoc* teams; receive comments and inputs from entities.
5. **Late January:** Share the draft Work Plan with the CEOS Secretariat.
6. **Early February:** Incorporate and reconcile CEOS SEC comments and share the Work Plan with the CEOS Principals for virtual endorsement IAW *Governance and Processes*.
7. **Mid-February:** Publish the final version of the CEOS 2015-2017 Work Plan





# Outcomes of SIT Technical Workshop

# Outcomes of SIT Technical Workshop



No.	Action	Due date
SITWS-2014-01	CEOS Chair to circulate an updated version of the CEOS-28 Plenary agenda for comment	SEC-193
SITWS-2014-02	WGCapD to approach the VCs and WGs to identify capacity building points of contact, and to support the promotion of their activities. These points of contact are to be added to a new CEOS mailing list to be used for promotion and coordination.	CEOS-28
SITWS-2014-03	WGDisasters, in coordination with WGISS, and the GEO Data Sharing Working Group to explore the possibility of developing a "common" data licence – with a test case for data sharing issues faced by WGDisasters.	CEOS-28
SITWS-2014-04	Jonathon Ross and Tom Cecere to coordinate an evaluation team to perform the analysis of options for the future of LSI-VC proposed in the "Position Paper on Options for Future of Land Imaging Coordination within CEOS", and present the results at CEOS Plenary	CEOS-28
SITWS-2014-05	John Bates to follow-up with Espen Volden on potential inputs on GFCS-relevant projects and programs to the upcoming GFCS implementation coordination meeting.	SEC-193
SITWS-2014-06	VC and WG Leads to organise a VC/WG Working Day, in conjunction with the 2015 SIT Workshop	Initial details to be presented at SIT-30
SITWS-2014-07	SIT Chair Team to work with the VC and WG leads in preparing for the 2015 VC/WG Working Day, taking into account the outcomes from the 2014 Working Day.	Initial details to be presented at SIT-30
SITWS-2014-08	Jean-Louis Fellous to work with Craig Donlon to review options for how to improve reporting, focused on progress and not process for the 2015 VC/WG workshop	Initial details to be presented at SIT-30
SITWS-2014-09	For WGCapD to take into account the outputs of Topic #2 of the VC/WG Day in the development of their 2015-2017 CEOS Work Plan objectives/deliverables	SIT-30
SITWS-2014-10	SIT Workshop participants to send comments on the Carbon Strategy Implementation Study Team action item analysis table to Kerry Swayer and Stephen Briggs	26 September

# Outcomes of SIT Technical Workshop



No.	Action	Due date
SITWS-2014-11	John Bates to report on WGClimate's willingness to coordinate the implementation of the CEOS Carbon Strategy actions	7 October
SITWS-2014-12	Brian Killough to work with the CEOS ad hoc Working Group on GEOGLAM on some options for the renaming of the group	7 October
SITWS-2014-13	All entities within CEOS (CEOS Chair, SIT Chair, CEO, SEO, WGs, VCs, <i>ad hoc</i> teams) to provide a 2 minute video describing their activities and role. This content will be used in the first instance for internal awareness and as first inputs to a webinar infrastructure	SIT-30
SITWS-2014-14	CEOS agencies to send nominations for members of a Water Strategy implementation study team to Kerry Sawyer. Study team to report back at SIT-30	26 September
SITWS-2014-15	SIT Chair team to include a report from the Water Strategy implementation study team on the SIT-30 agenda	SIT-30
SITWS-2014-16	Craig Donlon to share information on FRMs with Brian Killough, with reference to Brian's leadership of the IM-01 task	COMPLETE
SITWS-2014-17	Kerry to circulate the updated draft written summary of CEOS-CGMS climate activities provided by John Bates to CEOS SEC for comment	Comment from SEC by 26 September
SITWS-2014-18	Interested agencies to provide a requests for agency reports and side meetings to the CEOS Chair Team	SEC-193
SITWS-2014-19	Kim Keith to coordinate the CEOS update website group in developing a social media strategy for CEOS	SIT-30
SITWS-2014-20	CEO and CEOS SIT Chair to work with Jane Olwoch on the possible scoping for CEOS support for emerging space agencies	CEOS-28



## History and Background

- GEO Carbon Report developed in June 2010 by team led by Ciais et al. (GCP).
- *CEOS Strategy for Carbon Observations from Space* – written in response to above, completed in March 2014 – *Wickland et al.*
- Proposed results presented to SIT Workshop and CEOS Plenary in 2013.
- 42 Actions identified in the report for specific response including Action for Carbon Team to manage response via CEOS(/CGMS) Working Group Climate – first discussed at SIT Technical Workshop in September 2013
  - Issue remained open until April 2014,
- At SIT-29:
  - The *CEOS Strategy for Carbon Observations from Space* was endorsed during Plenary session
  - Proposed establishment of a study team to take forward the Actions and also identify formal CEOS mechanism to manage Actions.



## Progress and current status

- Spreadsheet of 42 Actions, based on Table 6.1 of the CEOS Strategy, completed by CSIST. Each analysed for:
  - Type of action (mission, cal/val, product, .....)
  - Action description text
  - mid/near/long term action (end 2015, end 2017, >2017)
  - CEOS lead and contributing entities
  - Compatibility with available CEOS Resources (Green/yellow/red)
  - Estimated effort (minor, major, significant new entity/activity)
  - Linkage to GEO Community of Practice
  - Need for partnerships with external agencies

Items in red above were new analysis of the CSIST; items in blue were originally identified in Table 6.1 but were reviewed and revised, as necessary, by the CSIST.



## Progress and current status

- Spreadsheet identified lead CEOS “Agency” as:
  - AC-VC: 6 Actions
  - LSI-VC: 4 Actions
  - WGClimat: 7 Actions
  - **WGCV: 11 Actions**
  - SIT: 6 Actions
  - N/A: 2 Actions
  - ??: 1 Action

**WGCV is  
identified as  
lead for 11 of  
the Carbon  
Actions – Most  
of any CEOS  
Entity!**

Please don't shoot the messenger.  
There will be more detailed discussion later this afternoon





# 28<sup>th</sup> CEOS Plenary Preparations



Area	Expected Outcomes	Agenda Item(s)
<b>Advancement of the CEOS Virtual Constellations and Working Groups</b>	Resolution of identified Working Group and Virtual Constellation issues (where applicable)	12-17
	Way forward for the LSI Virtual Constellation	18
	Approach to addressing outcomes of Climate Symposium	12, 26
<b>Support to other Key Stakeholder Initiatives</b>	Assignment of Implementation Responsibilities for the Actions contained in the CEOS Strategy for Carbon Observations from Space	21
	CEOS approach to responding to the GEOSS Water Strategy	22



<b>Outreach to Key stakeholders</b>	CEOS's proposed involvement in the development of the Post-2015 GEO Implementation Plan	10, 11
	CEOS representation at GEO-XI Plenary	25
	CEOS preparations for 2015 GEO Ministerial	25
	CEOS preparations for SBSTA-41/COP-20	27
	CEOS preparations for COP-21	27
	CEOS preparations for WCDRR	28
	Tromso Statement	5, 29
<b>Organisational Issues</b>	Closure of actions from previous plenaries	4
	CEO/DCEO transition arrangements	32
	SIT Vice-Chair nomination	33
	Extension of mandates of Ad Hoc initiatives	34
<b>Chair Priorities</b>	Identification of 2015 CEOS Chair priorities	38



- **A Tromsø statement will be developed:**
  - **Summarizing CEOS's past contributions**
  - **Looking forward to CEOS's potential contributions to significant events in 2015, such as:**
    - **WCDRR**
    - **COP-21**
    - **GEO Ministerial**
- **A first draft of the statement will be presented at the start of the Plenary and a final draft, for endorsement, will be presented at the end of the Plenary**



- **Plenary agenda is structured around 8 main topics:**
  - **Welcome and Opening**
  - **GEO Matters**
  - **WGs and VCs**
  - **Ad Hoc Initiatives**
  - **Coordination and Outreach**
  - **Organizational Issues**
  - **Agency Reporting**
  - **Future Vision and Handover**



- **Schedule for agenda finalization**

Event	Date
Release of updated draft agenda to CEOS agencies for review (reflecting SIT Workshop conclusions)	25 September
Deadline for submission of comments by CEOS agencies on draft agenda	9 October
Release of final draft agenda	16 October





## MEETING VENUE - Rica Ishavshotel, Tromsø, Norway

<http://ceosplenary2014.info/Participation.aspx#venue>

## ACCOMMODATION - Rica Ishavshotel, Tromsø, Norway

<http://ceosplenary2014.info/Participation.aspx#acomodation>

Deadline to benefit from the block booking: **22 September 2014**

(Tromsø is a very popular conference town, hence the early deadline).





# Thank You!

